

# Current Projects - Lakes, Ponds and Reservoirs

For more information this project please contact:

Randall Schultz  
Chariton Research Station  
24570 U.S. Hwy. 34  
Chariton, IA 50049  
(641) 774-2958  
[Randy.Schultz@dnr.iowa.gov](mailto:Randy.Schultz@dnr.iowa.gov)



## An Evaluation of Walleye Stocking Methods in Big Creek Lake

Big Creek Lake is an 883 ac impoundment located in central Iowa, near Des Moines, the largest human population center in the state. Intense angling pressure (116 h/ac) and numerous angler trips (32,000) indicated the importance of this fishery to central Iowa anglers.

Big Creek Lake was plagued with gizzard shad in the 1990's. As a result, various predatory fish species, including additional walleye, were stocked in an attempt to control the introduced shad population. Special walleye regulations (3 fish daily bag limit; 15-in minimum length limit, with 1 fish over 20-in) were also implemented to increase walleye density. However, the harsh winter of 2000-2001 caused a complete shad kill in Big Creek Lake. Biologists began to speculate that walleye were experiencing slow growth rates due to the absence of gizzard shad. As a result, the 8-in walleye fingerling stocking rate was reduced from 10 to 5 fingerlings/ac. Although this stocking rate has not sustained an adequate walleye population at Big Creek Lake, the walleye are experiencing adequate growth rates. Population estimates during 2007, 2008, and 2010 indicated low walleye density (1.13 walleye/ac  $\pm$  0.07 SE). Unfortunately, the availability of 8-in fingerling walleye has since been limited, which has not allowed stocking rates to return to 10 fish/ac, and this situation will likely continue due to budget constraints.

Previous results indicate that watershed tributaries can provide adequate resources for 2-in fingerling walleye and this stocking method warrants further investigation. Furthermore, 2-in walleye fingerling stockings in tributaries of small Iowa impoundments could provide a more cost effective method of increasing walleye densities when 8-in fingerlings are limited.

During 2012 we freeze-branded both 2- and 8-in walleye prior to stocking. We found little mortality related to freeze-branding. Fall electrofishing revealed fry-stocked walleye and advanced fingerlings stocked in 2011 and 2012 were the largest contributor to Big Creek's walleye population. We were unable to document 2-in walleye recruitment in either 2011 or 2012. Walleye have been tagged with Carlin dangler tags in an effort to determine exploitation of walleye in Big Creek Lake. Angler tag returns indicate exploitation is nearly 40% in this population. The highest number of tagged fish were caught in May, followed by July then June. Out-migration of walleye was evident as two tagged fish were caught in the Des Moines River system, which receives overflow from Big Creek Lake. We will continue sampling during spring and fall 2013 to determine the cost/benefit ratios of the three walleye stocking strategies.